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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,401	10/20/2003	Benjamin Jay Diamant	60963-0015	5943

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EXAMINER

TRUONG, CAM Y T

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/690,401	<b>Applicant(s)</b> DIAMENT, BENJAMIN JAY	
	<b>Examiner</b> Cam Y T. Truong	<b>Art Unit</b> 2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 7-12, 19-24 and 31-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 13-18 and 25-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-6, 13-18 and 25-30 are pending in this Office Action.

Applicant's election without argument group I: claims 1-6, 13-18 and 25-30 in the reply filed on 5/2/2006 is acknowledged. Since applicant elects without providing any argument; thus, this election is treated as without traversal.

The requirement is still deemed proper and is therefore made FINAL.

### ***Information Disclosure Statement***

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) because the serial No. 10/729449 on the IDS does not match with the serial of the application: 10690, 401.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-6, 12-18 and 25-30 are rejected under 35 U.S.C.101 because the claimed invention is directed to non-statutory subject matter, specifically, as directed to an abstract idea.

As regarding claims 1-6, "a method of querying number-range searches", the claims fail to contain a concret useful and tangible result. Thus, claims are merely

abstract idea are being processed without any links to a practical result in the technology arts.

As regarding claims 13-18, "a computer-readable medium", the claims fail to contain a concret useful and tangible result. Thus, claims are merely abstract idea are being processed without any links to a practical result in the technology arts.

As regarding claims 25-30, "a search engine for querying number-range searches", the claims are directed to a software pro se and fail to contain a concret useful and tangible result. Thus, claims are merely abstract idea are being processed without any links to a practical result in the technology arts.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6, 14, 13, 15, 16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuda (US 2003/0225779).

As to claims 1 and 13, Matsuda teaches the claimed limitations:

"receiving a number-range search query having one or more number ranges, wherein at least one number range includes at least one boundary number" as

processing a query have a condition of price  $>10$ . 10 is represented as one boundary number (paragraph [0047]);

“generating an expression of one or more numerical index terms based on the boundary number” as transforming query to an equivalence search using an inverted index generated, e.g., the exemplary query is simple query having a single search condition. For two numbers N and M, their tokens  $N_i$  and  $M_i$ , if  $N.M$  there exists, by definition, a token  $N_j$  which is greater than  $M_j$ . In this case, the transformed query has an index entry that includes attribute, token, list). The transformed query is based on number 10 (paragraph [0047, 0048, 0049], page 4, col. Right, lines 49-52),

“wherein at least one numerical index term includes information associated with an indexed number” as each index entry includes each token associated with an indexed number, e.g., token 0001 is associated with index 5 (page 4, col. Right, lines 49-52; fig. 5);

“identifying one or more document containing indexed numbered that satisfy the expression” as returning to the search condition, document Ids are retrieved from each matching token index which results in an ID list of all documents that match those tokens (paragraph [0052]).

As to claims 2, 14, Matsuda teaches the claimed limitation “wherein at least one numerical index term includes information indicative of a characteristic of at least one respective number” as (fig. 5, paragraph [0042], page 4, col. Right, lines 49-52).

As to claims 3, 15, Matsuda teaches the claimed limitation “wherein at least one numerical index term includes information indicating that a specified digit is the last non-zero digit of a respective number” as (fig. 5, page 4, col. Right, lines 49-52, paragraph [0042]).

As to claims 4, 16, Matsuda teaches the claimed limitation “wherein at least one numerical index term includes information indicative of the sign of at least one respective number” as (fig. 5, page 4, col. Right, lines 49-52, paragraph [0042]).

As to claims 6 and 18, Matsuda teaches the claimed limitation “wherein at least one numerical index term includes information indicative of at least one digit of an indexed number” as (fig. 5, paragraph [0042]).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Lewak et al (or hereinafter “Lewak”) (US 6826566).

As to claims 5, 17, Matsuda does not explicitly teach the claimed limitation “wherein at least one numerical index term includes information indicative of a number type associated with a respective number range”.

Lewak teaches value types includes numbers and dates (col. 12, lines 8-10).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Lewak’s teaching of value types includes numbers and dates to Matsuda’s system in order to allow a user to select a specific number type for searching so that the speed of query responses quickly.

9. Claims 25-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Burrows (US 6021409).

As to claim 25, Matsuda teaches the claimed limitations:

A query-encoder configured to receive a number-range search query having one or more number ranges, wherein at least one number range includes at least one boundary number” as processing a query have a condition of price >10. 10 is represented as one boundary number. The above information indicates that the system has included a query-encoder to receive the query and process the query (paragraph [0047]);

“the query-encoder is configured to generate an expression of one or more numerical index terms based on the boundary number” as transforming query to an equivalence search using an inverted index generated, e.g., the exemplary query is simple query having a single search condition. For two numbers N and M, their

tokens  $N_i$  and  $M_i$ , if  $N.M$  there exists, by definition, a token  $N_j$  which is greater than  $M_j$ . In this case, the transformed query has an index entry that includes attribute, token, list). The transformed query is based on number 10 (paragraph [0047, 0048, 0049], page 4, col. Right, lines 49-52),

“wherein at least one numerical index term includes information associated with an indexed number” as each index entry includes each token associated with an indexed number, e.g., token 0001 is associated with index 5 (page 4, col. Right, lines 49-52; fig. 5);

“configured to identify one or more document containing indexed numbered that satisfy the expression” as returning to the search condition, document Ids are retrieved from each matching token index which results in an ID list of all documents that match those tokens (paragraph [0052]).

Matsuda does not explicitly teach the claimed limitation “an index server coupled to the query encoder”.

Burrows teaches an server coupled to a search engine that includes a query module analyzes the queries 52 to generate query requests 54. The query module is represented as the query encoder (fig. 1, col. 6, lines 15-30).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Burrows’s teaching of an server coupled to a search engine that includes a query module analyzes the queries 52 to generate query requests 54 to Matsuda’s system in order to transform a search query in corresponding format that is used to search/retrieve data from remote server.



As to claim 26, Matsuda teaches the claimed limitation "wherein at least one numerical index term includes information indicative of a characteristic of at least one respective number" as (fig. 5, paragraph [0042], page 4, col. Right, lines 49-52).

As to claim 27, Matsuda teaches the claimed limitation "wherein at least one numerical index term includes information indicating that a specified digit is the last non-zero digit of a respective number" as (fig. 5, page 4, col. Right, lines 49-52, paragraph [0042]).

As to claim 28, Matsuda teaches the claimed limitation "wherein at least one numerical index term includes information indicative of the sign of at least one respective number" as as (fig. 5, page 4, col. Right, lines 49-52, paragraph [0042]).

As to claim 30, Matsuda teaches the claimed limitation "wherein at least one numerical index term includes information indicative of at least one digit of an indexed number" as (fig. 5, paragraph [0042]).

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (US 2003/0225779) in view of Brurrows (US 6021409) and further in view of Lewak et al (or hereinafter "Lewak") (US 6826566).

As to claim 29, Matsuda does not explicitly teach the claimed limitation "wherein at least one numerical index term includes information indicative of a number type associated with a respective number range".

Lewak teaches value types includes numbers and dates (col. 12, lines 8-10).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Lewak's teaching of value types includes numbers and dates to Matsuda's system in order to allow a user to select a specific number type for searching so that the speed of query responses quickly.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kanno (US 7007019).

### **Contact Information**

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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5/27/06